

EDUCATION	Georgia Institute of Technology , Atlanta, GA Ph.D. in Computer Science, 2022 - 2027 (Expected)
	Indian Institute of Technology Kanpur , India B.Tech. in Computer Science and Engineering, 2016-2020, CGPA: 8.8/10
PUBLICATIONS	<ol style="list-style-type: none">Hritvik Taneja, Moinuddin Qureshi “DREAM: Enabling Low-Overhead Rowhammer Mitigation via Directed Refresh Management” <i>ISCA</i>, 2025Hritvik Taneja, Moinuddin Qureshi “RogueRFM: Attacking Refresh Management for Covert-Channel and Denial-of-Service” <i>under Submission</i>Hritvik Taneja, Ali Hajiabadi, Michele Marazzi, Kaveh Razavi, Moinuddin Qureshi “All You Need is ALERT: Enabling Space-Time Efficient In-DRAM Mitigation” <i>under Submission</i>Hritvik Taneja, Jason Kim, Jie Jeff Xu, Stephan van Schaik, Daniel Genkin, Yuval Yarom “Hot Pixels: Frequency, Power, and Temperature Attacks on GPUs and Arm SoCs” <i>USENIX Security</i>, 2023Arpit Gupta, Parv Mor, Hritvik Taneja, Biswabandan Panda “STEVES: Pushing the Limits of Value Predictors with Sliding FCM and EVES” <i>Championship Value Prediction</i>, 2019
RESEARCH EXPERIENCE	Graduate Research Assistant December 2023 - Present Georgia Institute of Technology Atlanta, GA Advisor: Professor Moinuddin Qureshi Research Focus: Memory system optimizations for ML workloads
	Graduate Research Assistant August 2022 - November 2023 Georgia Institute of Technology Atlanta, GA Advisor: Professor Daniel Genkin Research Focus: Side-channel attacks
PROFESSIONAL EXPERIENCE	Advanced Design Verification Intern May 2024 - Aug 2024 Aster Labs Santa Clara, CA <ul style="list-style-type: none">Developed a tool for large-scale Verilog simulations on an AWS-backed cluster.Focused on improving the cost efficiency by reducing the unused memory and utilizing spot instances.
	Infrastructure Developer Jan 2020 - Dec 2021 Plutus Research Private Limited Bengaluru, India <ul style="list-style-type: none">Improved latency of market-data arrival to high-frequency trading (HFT) strategies — by 20% in median and by 30% in 90 percentile.Developed an approximate backtesting framework that uses snapshots of the price-level order book to generate trade responses — with minimal deviation in the fill ratio.
	Software Engineering Intern May 2019 - Jul 2019 Nutanix, Inc. Bengaluru, India <ul style="list-style-type: none">Improved the average turnaround time of the Nutanix Calm API by 80 fold, by caching responses.Use gossip protocol to ensure cache consistency, in a scaled-out setup.Worked on bug fixes and implemented new features in frontend and backend, as part of the Nutanix CALM team.

Backend Developer

May 2017 - July 2017

New York Office, IIT Kanpur

Kanpur, India

- Worked on a scalable microservice based web application with an extensive technology stack.
- Used Scala with Akka, Facebook's Phabricator among other technologies for developing the backend.

KEY PROJECTS

Hardware Security Lab

August 2022 - February 2023

Georgia Institute of Technology

Atlanta, GA

- Discovered and evaluated the data-dependent nature of frequency scaling on GPUs and Arm SoCs.
- Exploited this phenomenon to mount Pixel Stealing, History Sniffing, and Website Fingerprinting attacks on various devices.
- Apple assigned us CVE-2023-38599 for our work.

Championship Value Prediction

Dec 2018 - Jun 2019

Indian Institute of Technology Kanpur

Kanpur, India

- Proposed and built an FCM based value predictor, which achieves an improvement of 1.4% over state-of-the-art EVES predictor.
- Secured first (currently third) position on the unlimited track leaderboard of CVP from May'19 to November'19.

NINE LLCs in Multicore Processors

Aug 2019 - Nov 2019

Indian Institute of Technology Kanpur

Kanpur, India

- Designed a non-inclusive non-exclusive LLC, which marks each block either as inclusive or exclusive in a multi-core processor.
- Implemented a cache simulator equipped with MESI cache coherence protocol to analyze performance counters like messages & misses.
- Improved the performance in terms of private cache misses, LLC misses, and number of interconnect messages – **Report**.

Inter-Procedural Data-flow Analysis

Aug 2019 - Nov 2019

Indian Institute of Technology Kanpur

Kanpur, India

- Ported and implemented the inter-procedural analysis from [PadhyeK13] to LLVM (originally in Soot).
- Modified the framework [PadhyeK13] to account for fundamental differences between Soot and LLVM
- Designed and implemented a sign data-flow analysis using the same framework – **Code**.

Golang Compiler

Jan 2019 - April 2019

Indian Institute of Technology Kanpur

Kanpur, India

- A compiler for go written in go as a course project for compilers. Compiles from golang to x86 assembly.
- Supports a subset of the go language, including pointers, type checking, recursion, and some other common language features – **Code**.

SKILLS

Proficient: C/C++, Python, Pytorch